INTERSTATE 405 Corridor Program
Congestion Relief & Bus Rapid Transit Projects

APPENDIX P4

Hydraulic Project Approval- WDFW

I-405, SR520 to SR522 Stage 1 (Kirkland Stage 1)

Request For Proposal
July 15, 2005

Washington State Department of Transportation

ATTENTION,

PLEASE NOTE THAT WSDOT IS WORKING ON A PERMIT MODIFICATION TO THIS HYDRAULIC PROJECT APPROVAL. ANTICIPATED CHANGES TO PERMIT CONDITIONS HAVE BEEN LISTED BELOW. A FINAL COPY OF THE HYDRAULIC PROJECT APPROVAL WILL BE ADDED TO THE RFP BY ADDENDUM:

Known revisions to HPA are as follows:

Conditions 18, 27, 33, 35 and 36 have been revised to read respectively,

18) A temporary full water bypass to divert flow or coffer dam to deflect flow around the work area shall be in place prior to initiation of work in the wetted perimeter.

If full water bypass is used, gravity pipe or water pumping shall be the approved bypass method. Gravity full water bypass shall be designed to safely pass fish, including, at a minimum, a smooth bypass entry and passageway, gradient less than 1% within 25 feet of the terminal end, and a water drop at the terminal end into a stilling basin of sufficient size, depth of water, and devoid of hard projections that fish would land on and be damaged. A stilling basin shall be designed to fully drain to prevent fish stranding. If pumping full water bypass is used, compliance with pump intake screening criteria in Provision 24 shall be done and the pumping shall be continually monitored with backup pump system in case of failure. Pumped return water shall re-enter the stream directly in a pooled area where the hydraulic energy will be dissipated and not result in streambed and streambank erosion.

27) The culvert width shall be equal or greater than 78-inch diameter and shall consist of a single barrel.

33) Disturbance of the streambed and banks shall be limited to that necessary to place the culvert, construct access road, and any required channel modification associated with it. Affected streambed and bank areas outside the culvert and associated fill shall be restored to pre project configuration following installation of the culvert. Within one year of project completion, the banks shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival. This provision does not preclude a permanent maintenance access road outside the ordinary high water line (OHWL).

35) The overflow from the high-flow bypass existing culvert shall fall into a concrete-lined stilling basin that has sufficient volume and depth of water to prevent fish injury during fall. The stilling basin shall fully drain to prevent fish stranding.

36) a. Pool volume shall be a minimum of 216 cubic feet, and a minimum depth of 3.4 feet from the water surface elevation at 18 cubic feet per second.

e. The fishway overflow shall fall into a concrete-lined stilling basin that has sufficient volume and depth of water to prevent fish injury during fall. The stilling basin shall fully drain to prevent fish stranding.

Washington Department of FISH and WILDLIFE

HYDRAULIC PROJECT APPROVAL

RCW 77.55.100 - Appeal pursuant to Chapter 34.05 RCW

North Puget Sound
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
(425) 775-1311

Issue Date: May 05, 2005
Expiration Date: May 04, 2010

Control Number: 100242-1
FPA/Public Notice #:

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Washington State Dept of Transportation ATTENTION: Kimberly Farley 600 - 108th Ave NE Bellevue WA, 98004 206-456-8500( )	I-405 Project Team ATTENTION: Chad Durand 600 - 108th Avenue NE Bellevue WA, 98004 425-456-8571

Project Name: I-405, SR-520 to SR-522 Project

Project Description: This is a "Design-Build" roadway widening and reconstruction project, including:

1. Forbes Creek: Replacement of an existing 42-inch diameter round, non fish-passable culvert with a fish-passable facility.
2. Two unnamed perennial tributaries to Juanita Creek in non fish-bearing reaches: Culvert replacement/extensions.
3. Various unnamed intermittant tributaries to Forbes Creek, Yarrow Creek, and Kirkland City vicinity streams in non fish-bearing reaches: Culvert replacement/extensions.
4. Unnamed tributary to North Creek: Culvert removal.
5. Unnamed tributary to Forbes Lake: Culvert removal and channel change.
6. Forbes lake wetland mitigation site: Shoreline excavation.

Acceptable options in order of preference for the Forbes Creek culvert retrofit or replacement include:

1. Bridge: Include design elements to ensure the streambed under the bridge will be fish passable and no upstream degradation (head cut) will occur.
2. Stream simulation culvert: Include a larger sloping culvert to meet WDFW streambed simulation criteria with natural streambed materials inside and no fishway either at the outlet end or inside the culvert.
3. Fishway inside culvert. A fish-passable, 108-inch minimum diameter round culvert, placed at a 2.1% slope, and fishway weirs welded inside the culvert.
4. Culvert and external concrete fishway: A fish-passable, 78-inch minimum diameter round, flat gradient culvert and a concrete fishway at the outlet end.

Any submitted option will require a review of plans and and may require a modification of this HPA.

Issue Date: May 05, 2005 Control Number: 100242-1
Expiration Date: May 04, 2010 FPA/Public Notice #:

PROVISIONS

1. TIMING LIMITATIONS: The project may begin May 5, 2005, and shall be completed by May 4, 2010, provided:

a. Work within the ordinary high water line (OHWL) of perennial streams including Forbes Creek, the two unnamed tributaries to Juanita Creek, and Crystal Creek tributary to North Creek, shall only occur during the time period of June 15 through September 30, annually, for protection of fish spawning.

2. Work shall be accomplished per plans and specifications approved by the Washington Department of Fish and Wildlife entitled:

a. I-405 Congestion Relief and Bus Rapid Transit Projects, SR-520 to SR-522, dated September 20, 2004;
b. Draft Wetland Mitigation Plan I405, SR 522 to SR 520 Kirkland Nickel Project, dated January 2005;
c. Culvert Removal and Ditch Relocation (Unnamed Tributary to Forbes Lake), dated April 28, 2005;
d. Section "C" through Existing Crystal Creek Culvert, no date;

except as modified by this Hydraulic Project Approval. A copy of these plans shall be available on site during construction.

This is a contractor "Design-Build" roadway widening and reconstruction project that includes stream work:

a. Forbes Creek: Replacement of an existing 42-inch diameter round, non-fish passable culvert with a fish-passable facility.
b. Two unnamed perennial tributaries to Juanita Creek in non fish-bearing reaches: Culvert replacement/extensions.
c. Various unnamed intermittant tributaries to Forbes Creek, Yarrow Creek, and Kirkland City vicinity streams in non fish-bearing reaches: Culvert replacement/extensions.
d. Unnamed tributary to North Creek: Culvert removal.
e. Unnamed tributary to Forbes Lake: Culvert removal and channel change.
f. Forbes lake wetland mitigation site: Shoreline excavation.

Provisions for acceptable fish-passable facility options for the Forbes Creek culvert replacement are included in this HPA generally. Submission to WDFW of the final construction plan of the selected fish-passable option shall be required for review and supplemental approval in writing by WDFW prior to construction.

NOTIFICATION PROVISIONS

3. BIOLOGIST NOTIFICATION REQUIREMENT: The Area Habitat Biologist listed below shall

receive written notification (FAX or mail) from the person to whom this Hydraulic Project Approval (HPA) is issued (permittee) or the agent/contractor no less than seven (7) days prior to start of any stream work in Forbes Creek, unnamed tributaries to Juanita Creek, and Crystal Creek, tributary to North Creek, and again within (7) seven days of completion of work to arrange for a compliance inspection. The notification shall include the permittee's name, project location, starting date for work or completion date of work, and the control number for this HPA.

[AHB: Jim Fraser, 600 Capitol Way N., Olympia, WA 98501; tel 360-902-2566; fax 360-902-2566; email frasejlf@dfw.wa.gov]

4. ENFORCEMENT NOTIFICATION REQUIREMENT: The Enforcement Sergeant listed below shall receive written notification (FAX or mail) from the person to whom this Hydraulic Project Approval (HPA) is issued (permittee) or the agent/contractor no less than seven (7) days prior to start of work, and again within seven (7) days of completion of work in Forbes Creek, unnamed tributaries to Juanita Creek, and Crystal Creek, tributary to North Creek to arrange for a compliance inspection. The notification shall include the permittee's name, project location, starting date for work or completion date of work, and the control number for this HPA.

[Sgt. Chandler; 16018 Mill Creek Blvd., Mill Creek WA 98012; Fax: 425-338-1066; Tel: 425-775-1311]

FISH KILL AND WATER QUALITY PROBLEM PROVISION

5. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Department of Ecology at 1-800-258-5990, and to the Area Habitat Biologist listed below.

[AHB: Jim Fraser, 600 Capitol Way N., Olympia, WA 98501; tel 360-902-2566; fax 360-902-2566; email frasejlf@dfw.wa.gov]

EQUIPMENT USE PROVISIONS

6. Equipment used for this project may operate below the ordinary high water line, provided the drive mechanisms (wheels, tracks, tires, etc.) shall not enter or operate on the streambed or lakebed below the ordinary high water line of any flowing stream or wetted lake area.

7. Equipment used for this project shall be free of external petroleum-based products while working around the stream or lake. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and undercarriage of equipment prior to its working around the stream or lake. Equipment shall be checked daily for leaks and any necessary repairs shall be completed prior to commencing work activities around the stream or lake.

8. Equipment crossings on the streambed or lakebed are not authorized by this HPA.

WATER QUALITY PROTECTION PROVISIONS

9. Erosion control methods shall be used to prevent silt-laden water from entering the stream or lake by use of appropriate best management practices (BMPs).

10. Wastewater from project activities and water removed from within the work area shall be routed to an area landward of the ordinary high water line approved by the appropriate regulatory authority to allow removal of fine sediment and other contaminants prior to being discharged to the stream.

11. All waste material such as construction debris, silt, excess dirt or overburden resulting from this project shall be deposited above the limits of flood water in an upland disposal site approved by the appropriate regulatory authority.

12. If high flow or lake water level conditions that may cause siltation are encountered during this project, work shall stop until the flow or level subsides.

13. Care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the stream.

14. Fresh concrete or concrete by-products shall not be allowed to enter the stream at any time during this project. All forms used for concrete shall be completely sealed to prevent the possibility of fresh concrete from getting into the stream.

15. The cofferdam shall be completely sealed to prevent concrete or other deleterious products from leaching into the stream.

16. Material removed from inside the cofferdam shall be disposed of outside the flood plain of the stream in an area approved by the appropriate regulatory authority.

SAFE FISH REMOVAL PROVISIONS

17. The permittee shall capture and safely move food fish, game fish, and other fish life from the job site at any area that includes water bypass, in-water coffer dam, and any water area likely to be disturbed. The permittee shall have fish capture and transportation equipment ready and on the job site. Captured fish shall be immediately and safely transferred to free-flowing water downstream of the project site. The permittee may request the Washington Department of Fish and Wildlife assist in capturing and safely moving fish life from the job site to free-flowing water, and assistance may be granted if personnel are available.

WATER BYPASS AND COFFER DAM PROVISIONS

18. A temporary water bypass or coffer dam to divert flow around the work area shall be in place

prior to initiation of other work in the wetted perimeter. Gravity pipe or water pumping shall be the approved bypass method. A coffer dam shall be constructed of clean materials (sheeting, gravel bags, etc.). If water pumping is used, compliance with pump intake screening criteria below shall be done and the pumping shall be continually monitored in case of pump failure.

A temporary gravity water bypass pipe shall be designed to safely pass fish. This shall include, at a minimum, a smooth bypass entry and passageway, gradient less than 1% within 25 feet of the terminal end, and a water drop into a water basin of sufficient size and depth and devoid of hard projections or bottom that fish would land on and be damaged .

19. A sandbag revetment or similar device shall be installed at the bypass inlet to divert the entire flow through the bypass.

20. A sandbag revetment or similar device shall be installed at the downstream end of the bypass to prevent backwater from entering the work area.

21. The bypass shall be of sufficient size to pass all flows and debris for the duration of the project.

22. Prior to releasing the water flow to the project area, all bank protection or armoring shall be completed.

23. Upon completion of the project, all material used in the temporary bypass or coffer dam shall be removed from the site and placed in an area approved by the appropriate regulatory authority and the site returned to preproject or improved conditions.

PUMP INTAKE SCREENING PROVISION

24. Any device used for diverting water from a fish-bearing stream shall be equipped with a fish guard to prevent passage of fish into the diversion device pursuant to RCW 77.55.040 and 77.16.220. The pump intake shall be screened with 3/32-inch mesh to prevent fish from entering the system. The screened intake shall consist of a facility with enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. Screen maintenance shall be adequate to prevent injury or entrapment to juvenile fish and the screen shall remain in place whenever water is withdrawn from the stream through the pump intake.

A temporary pumped water bypass shall re-enter the stream directly in a pooled area where the hydraulic energy will be dissipated and not result in streambed and streambank erosion.

FORBES CREEK - CULVERT AND CONCRETE FISHWAY OPTION PROVISIONS

25. The culvert shall be installed and maintained to ensure unimpeded fish passage.

26. The culvert shall be placed on a near-flat gradient with the bottom of the culvert placed below the level of the streambed to accept the first 18 cubic feet per second (cfs) stream flow prior to flow

entering the existing (remaining) overflow culvert. The water depth inside the new culvert shall be a minimum of 0.8 feet for its full length at all flows.

27. The culvert width at the streambed shall be equal to or greater than 78-inches and shall consist of a single barrel..

28. The culvert shall be installed to maintain structural integrity to the 100-year peak flow with consideration of the debris likely to be encountered.

29. Fill associated with the culvert installation shall be protected from erosion to the 100-year peak flow.

30. The culvert shall be installed and maintained to avoid inlet scouring and to prevent erosion of stream banks downstream of the project.

31. The culvert and fishway facility shall be maintained by the owner(s) per RCW 77.55.060 to ensure continued, unimpeded fish passage. If the structure becomes a hindrance to fish passage, the owner(s) shall be responsible for obtaining an Hydraulic Project Approval and providing prompt repair. Financial responsibility for maintenance and repairs shall be that of the owner(s).

32. The culvert shall be installed in the dry or in isolation from the stream flow by the installation of a bypass flume or culvert, or by pumping the stream flow around the work area.

33. Disturbance of the streambed and banks shall be limited to that necessary to place the culvert and any required channel modification associated with it. Affected streambed and bank areas outside the culvert and associated fill shall be restored to preproject configuration following installation of the culvert. Within one year of project completion, the banks shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

34. Approach material shall be structurally stable and be composed of material that, if eroded into the stream, shall not be detrimental to fish life.

35. Fishway design shall meet WDFW criteria stated in WDFW manual Fishway Guidelines for Washington State, WDFW web site: http://wdfw.wa.gov/hab/ahg/fishguid.pdf. Final design approval by WDFW is required prior to construction. Fishway critera shall include:

a. Pool volume shall be at a minimum of 8-feet wide, 8-feet long, and 4.5-feet deep.
b. Freeboard on walls shall be 3-feet above the high flow water surface elevation.
c. First pool upstream (immediately downstream of the culvert exit) shall accomaodate potential debris and sediment loading (could be deeper with

cleanouts or a sluice gate).

d. Entrance shall be extended downstream 5 to 10 feet beyond the influence of culvert overflow stream.
e. The culvert overflow stream shall fall into a concrete-lined stilling basin that has sufficient volume and depth of water to prevent fish injury during fall.
f. Stilling basin shall have a downstream streambed-level weir as a streambed control and be consistent with the fishway entrance.
g. Pools shall be water tight, including weirs with sluice gates.
h. Water surface drop shall not exceed 0.75 feet from either top of weir to top of weir or from pool water surface to pool water surface.

FORBES CREEK - BRIDGE OPTION PROVISIONS

36. Excavation for and placement of the foundation and superstructure shall be outside the ordinary high water line.

37. The bridge structure shall be placed in a manner to minimize damage to the streambed and banks.

38. The bridge shall be constructed to pass the 100-year peak flow with consideration of debris likely to be encountered.

39. Abutments, piers, piling, sills, approach fills, etc., shall not constrict the flow and cause any appreciable increase (not to exceed 0.2 feet) in backwater elevation (calculated at the 100-year flood) or channel-wide scour, and shall be aligned to cause the least effect on the hydraulics of the stream.

40. Riprap materials used for structure protection shall be clean, angular rock, which shall be installed to withstand the 100-year peak flow.

41. Structures containing concrete shall be sufficiently cured prior to contact with water to avoid leaching. Fresh concrete shall not be allowed to come into contact with state waters.

42. Approach material shall be structurally stable and shall be composed of material that if eroded into the water shall not be detrimental to fish life.

43. The bridge stringers shall be placed in a manner to minimize damage to the streambed or banks.

44. Removal of the existing structure shall be accomplished so the structure and associated material does not enter the stream. Material shall be disposed of so it will not re-enter the stream.

45. Removal shall be accomplished by mechanical means. This Hydraulic Project Approval does

not authorize blasting.

46. The new streambed gradient under the bridge shall be equivalent to the natural streambed gradient measured from points 200 feet upstream and 200 feet downstream of the existing culvert ends.

47. The new streambed under the bridge shall comply with stream restoration provisions below.

48. The natural streambed elevation at the upstream end of the reconstructed streambed shall be controlled to prevent upstream degradation (head cut).

FORBES CREEK - STREAMBED SIMULATION OPTION PROVISION

49. Streambed simulaton design shall comply with the streambed simulation criteria as described in the WDFW manual Design of Road Culverts for Fish Passage, Chapter 6, WDFW web site: http://wdfw.wa.gov/hab/engineer/cm/culvert_manual_final.pdf.

FORBES CREEK - FISHWAY IN-CULVERT OPTION PROVISIONS

50. The new culvert shall be a single barrel and the diameter shall be equal to or greater than 108-inches.

51. In-culvert fishway design shall meet WDFW criteria stated in WDFW manual Fishway Guidelines for Washington State, WDFW web site: http://wdfw.wa.gov/hab/ahg/fishguid.pdf. Final design approval by WDFW is required prior to construction. Fishway criteria shall include:

a. Pool volume shall be at a minimum of 9-feet wide, 36-feet long, and 3.0-feet deep for the entire length of the pool, or 812 cubic feet for a 0.75 foot drop between successive weir elevations,
b. The top of the first weir upstream (at the culvert entrance) shall be placed at streambed elevation,
c. The top of the last weir downstream (at the culvert exit) shall be placed at streambed elevation,
d. Weirs attached to the culvert wall and fishway pools shall be water tight,
e. Water surface drop shall not exceed 0.75 feet from either top of weir to top of weir or from pool water surface to pool water surface up to 67 cfs,
f. All weirs shall be shaped to concentrate flows to the center of the culvert (full spanning V-notch) up to a flow of 67 cfs.

52. The new culvert including in-culvert fishway shall be installed and maintained to ensure unimpeded fish passage.

53. The existing culvert shall be plugged in place or removed to insure all stream flow enters the new culvert.

54. The new culvert shall be placed at or near 2.1% slope. The water depth inside the new fishway shall be a minimum of 3.0 feet at all flows.

55. The fishway weir height in the culvert shall be a minimum of 3.75-feet.

56. The culvert shall be installed to maintain structural integrity to the 100-year peak flow with consideration of the debris likely to be encountered.

57. Fill associated with the culvert installation shall be protected from erosion to the 100-year peak flow.

58. The culvert shall be installed and maintained to avoid inlet scouring and to prevent erosion of stream banks downstream of the project.

59. The fishway-in-culvert facility shall be maintained by the owner(s) per RCW 77.55.060 to ensure continued, unimpeded fish passage. If the structure becomes a hindrance to fish passage, the owner(s) shall be responsible for obtaining an Hydraulic Project Approval and providing prompt repair. Financial responsibility for maintenance and repairs shall be that of the owner(s).

60. The culvert shall be installed in the dry or in isolation from the stream flow by the installation of a bypass flume or culvert, or by pumping the stream flow around the work area.

61. Approach material shall be structurally stable and be composed of material that, if eroded into the stream, shall not be detrimental to fish life.

62. Disturbance of the streambed and banks shall be limited to that necessary to place the culvert and any required channel modification associated with it. Affected streambed and bank areas outside the culvert and associated fill shall be restored to pre-project configuration following installation of the culvert. Within one year of project completion, the banks shall be re-vegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

FORBES CREEK - PERMANENT FISHWAY ACCESS ROAD PROVISIONS

63. A permanent access road to any fishway in or outside any new culvert shall be required for monitoring, inspection, and maintenence.

64. The fishway access road shall meet standard road design and construction criteria and be fully stabilized within seven days of final grading to prevent erosion and stream sedimentation.

FORBES CREEK - STREAM RESTORATION PROVISIONS

65. The stream in the water bypass area that is disturbed shall be restored to WDFW streambed, streambank, and streambank/riparian area restoration criteria, including:

a. Stream length and configuration: The permanent new channel shall be similar in length, width, depth, floodplain configuration, and gradient as the original channel. Channel restoration shall be performed using the WDFW Stream Habitat Restoration Guidelines Manual, section 5.3, pages 17-29: found at: http://wdfw.wa.gov/hab/ahg/shrg/07-shrg_channel_modification_.pdf.
b. Streambed: Streambed material gradation shall meet guidelines found in WDFW manual Design of Road Culverts for Fish Passage, pages 36-37, WDFW web site: http://wdfw.wa.gov/hab/engineer/cm/culvert_manual_final.pdf.
c. Instream cover habitat: Large woody material with one-foot minimum diameter breast height shall be secured within the low-flow water margin at a maximum interval of 30 feet.
d. Streambank and riparian area: All such disturbed areas shall comply with the disturbed area revegetation provision below.

CULVERT REPLACEMENTS AND EXTENSIONS IN INTERMITTENT STREAMS

66. The culvert shall be installed to maintain structural integrity to the 100-year peak flow with consideration of the debris likely to be encountered.

67. Fill associated with the culvert installation shall be protected from erosion to the 100-year peak flow.

68. The culvert shall be installed and maintained to avoid inlet scouring and to prevent erosion of stream banks downstream of the project.

69. The culvert shall be installed in the dry or in isolation from the stream flow by the installation of a bypass flume or culvert, or by pumping the stream flow around the work area.

70. The culvert shall consist of a single barrel.

71. Approach material shall be structurally stable and be composed of material that, if eroded into the stream, shall not be detrimental to fish life.

BORING AND JACKING PIT PROVISIONS

72. When boring or jacking, pits shall be isolated from surface water flow. Wastewater, from project activities and dewatering, shall be routed to an area outside the ordinary high water line approved by the appropriate regulatory authority to allow removal of fine sediment and other contaminants prior to being discharged to state waters.

73. Excavated spoils shall be placed in an area approved by the appropriate regulatory authority, stabilized, and protected from erosion.

74. When the boring or jacking is completed, the pit shall be filled, contoured with the existing terrain, stabilized, and protected from erosion.

CRYSTAL CREEK, TRIBUTARY TO NORTH CREEK - CULVERT REMOVAL PROVISIONS

75. The culvert and fill shall be removed and the channel shaping shall occur in the dry or in isolation from stream flow by the installation of a bypass to divert the stream flow around the work area. Channel shaping shall match the bank and channel sideslopes upstream and downstream for a smooth transition of the new open channel reach.

76. Disturbance of the streambed and banks shall be limited to that necessary to remove the existing culvert and any required channel modification associated with it. Affected streambed and bank areas outside the culvert shall be restored to preproject condition following culvert removal.

77. Within seven calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or other means. Within one year of project completion, the banks shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

78. The approaches shall be blocked to vehicular traffic within seven (7) days after project completion.

79. Streambed spawning gravel for salmonid fish shall be placed below the bed in the culvert site at Crystal Creek.

A minimum of 12 inches deep of clean, rounded, uniformly-graded gravel with a size composition of:

50+/- 5 percent of 3.0 to 1.5 inches;
50+/- 5 percent of 1.5 to 0.25 inches, with fines less than 0.25 inches not exceeding 5 percent total volume, shall be placed throughout the channel. to a minimum depth of one (1) foot.

UNNAMED TRIBUTARY TO FORBES LAKE - CULVERT REMOVAL AND CHANNEL CHANGE PROVISIONS

80. The culvert and fill shall be removed and the new channel construction shall occur in the dry or in isolation from stream flow by the installation of a bypass to divert the stream flow around the work area. Channel shaping shall match the bank and channel sideslopes upstream and downstream for a smooth transition of the new open channel reach.

81. Before water is diverted into the permanent new channel, all channel stabilization work and materials shall be in place.

82. Within seven (7) calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or other means. Within one year of project completion, the banks shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

83. The approaches shall be blocked to vehicular traffic within seven (7) days after project completion.

84. Spoils from the new channel shall be placed in an approved upland site. This material mayl be used to fill the old channel once the diversion has been completed.

85. The angle of the structure used to divert the stream into the new channel shall allow a smooth transition of stream flow.

FORBES LAKE - SHORELINE EXCAVATION PROVISIONS

86. Dredging shall be accomplished in the dry. Work shall be separated from the lake by use of a temporary coffer dam if necessary for compliance. The temporary coffer dam shall be constructed of clean materials (sheeting, gravel bags, etc.). Dredged material shall not be stockpiled waterward of the ordinary high water line.

87. Equipment shall be operated to minimize turbidity.

88. Upon completion of the dredging, the lake shore shall contain no pits, potholes, or large depressions to avoid stranding of fish.

89. Within seven (7) calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or other means. Within one year of project completion, the banks shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

Issue Date: May 05, 2005
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PROJECT LOCATIONS

Location #1 Unnamed — Work Start:05-05-2005 Work End:05-04-2010

WRIA	WATERBODY		TRIBUTARY TO		COUNTY
08.0230	Unnamed Creek		Lake Washington		King
1/4 SEC.	Section	Township:	Range:	Latitude:	Longitude
E 1/2	20	26 N	05 E	N 47.7233	W 122.1900
DRIVING DIRECTIONS: I-405 at stream crossings vicinity of Totem Lake highway section.					

Location #2 Forbes Creek — Work Start:05-05-2005 Work End:05-04-2010

WRIA	WATERBODY		TRIBUTARY TO		COUNTY
08.0242	Forbes Creek		Lake Washington		King
1/4 SEC.	Section	Township:	Range:	Latitude:	Longitude
NW 1/4	33	26 N	05 E	N 47.6937	W 122.1809
DRIVING DIRECTIONS: I-405 vicinity Totem lake highway section at Forbes Creek crossing.					

Location #3 Unnamed trib — Work Start:05-05-2005 Work End:05-04-2010

WRIA	WATERBODY		TRIBUTARY TO		COUNTY
08.6014	Forbes Lake				King
1/4 SEC.	Section	Township:	Range:	Latitude:	Longitude
NW 1/4	04	25 N	05 E	N 47.6860	W 122.1777
DRIVING DIRECTIONS: Kirkland, east of Forbes Lake vicinity 124th NE.					

Location #4 Forbes Lake — Work Start:05-05-2005 Work End:05-04-2010

WRIA	WATERBODY		TRIBUTARY TO		COUNTY
08.6014	Forbes Lake				King
1/4 SEC.	Section	Township:	Range:	Latitude:	Longitude
NW 1/4	04	25 N	05 E	N 47.6851	W 122.1806
DRIVING DIRECTIONS: Kirkland, south end of Forbes Lake.					

Location #5 Thrashers Corner — Work Start:05-05-2005 Work End:05-04-2010

WRIA	WATERBODY		TRIBUTARY TO		COUNTY
08.0070	North Creek		North Creek		Snohomish
1/4 SEC.	Section	Township:	Range:	Latitude:	Longitude
NE 1/4	30	27 N	05 E	N 47.8043	W 122.2147
DRIVING DIRECTIONS: Bothell, I-405 and SR 527, north on SR-5271/2 mile, west on 214th St SE 2 blocks to site on north.					

NOTES

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to the provisions of the Washington State Fisheries and Wildlife Code, specifically RCW 77.55 (formerly RCW 75.20). Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass. It is the responsibility of the permit holder to secure any landowner permissions or use authorizations as needed for the project.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued pursuant to RCW 77.55.100 or 77.55.200 are subject to additional restrictions, conditions or revocation if the Department of Fish and Wildlife determines that new biological or physical information indicates the need for such action. The person(s) to whom this Hydraulic Project Approval is issued has the right pursuant to Chapter 34.04 RCW to appeal such decisions. All Hydraulic Project Approvals issued pursuant to RCW 77.55.110 may be modified by the Department of Fish and Wildlife due to changed conditions after consultation with the person(s) to whom this Hydraulic Project Approval is issued: PROVIDED HOWEVER, that such modifications shall be subject to appeal to the Hydraulic Appeals Board established in RCW 77.55.170.

APPEALS INFORMATION

IF YOU WISH TO APPEAL THE ISSUANCE OR DENIAL OF, OR CONDITIONS PROVIDED IN A HYDRAULIC PROJECT APPROVAL, THERE ARE INFORMAL AND FORMAL APPEAL PROCESSES AVAILABLE.

A. INFORMAL APPEALS (WAC 220-110-340) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.100, 77.55.110, 77.55.140, 77.55.190, 77.55.200, and 77.55.290: A person who is aggrieved or adversely affected by the following Department actions may request an informal review of:

(A)The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made

part of a Hydraulic Project Approval; or

(B)An order imposing civil penalties. A request for an INFORMAL REVIEW shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, 600 Capitol Way North, Olympia, Washington 98501-1091 and shall be RECEIVED by the Department within 30-days of the denial or issuance of a Hydraulic Project Approval or receipt of an order imposing civil penalties. If agreed to by the aggrieved party, and the aggrieved party is the Hydraulic Project Approval applicant, resolution of the concerns will be facilitated through discussions with the Area Habitat Biologist and his/her supervisor. If resolution is not reached, or the aggrieved party is not the Hydraulic Project Approval applicant, the Habitat Environmental Services Division Manager or his/her designee shall conduct a review and recommend a decision to the Director or his/her designee. If you are not satisfied with the results of this informal appeal, a formal appeal may be filed.

B. FORMAL APPEALS (WAC 220-110-350) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.100 OR 77.55.140: A person who is aggrieved or adversely affected by the following Department actions may request a formal review of:

(A) The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval;

(B) An order imposing civil penalties; or

(C) Any other 'agency action' for which an adjudicative proceeding is required under the Administrative Procedure Act, Chapter 34.05 RCW.

A request for a FORMAL APPEAL shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, shall be plainly labeled as 'REQUEST FOR FORMAL APPEAL' and shall be RECEIVED DURING OFFICE HOURS by the Department at 600 Capitol Way North, Olympia, Washington 98501-1091, within 30-days of the Department action that is being challenged. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, the deadline for requesting a formal appeal shall be within 30-days of the date of the Department's written decision in response to the informal appeal.

C. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.110, 77.55.200, 77.55.230, or 77.55.290: A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The request for FORMAL APPEAL shall be in WRITING to the Hydraulic Appeals Board per WAC 259-04 at Environmental Hearings Office, 4224 Sixth Avenue SE, Building Two - Rowe Six, Lacey, Washington 98504; telephone 360/459-6327.

D. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO CHAPTER 43.21L RCW: A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The FORMAL APPEAL shall be in accordance with the provisions of Chapter 43.21L RCW and Chapter 199-08 WAC. The request for FORMAL APPEAL shall be in WRITING to the Environmental and Land Use Hearings Board at Environmental Hearings Office, Environmental and Land Use Hearings Board, 4224 Sixth Avenue SE, Building Two - Rowe Six, P.O. Box 40903, Lacey, Washington 98504; telephone 360/459-6327.

E. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS RESULTS IN FORFEITURE OF ALL APPEAL RIGHTS. IF THERE IS NO TIMELY REQUEST FOR AN APPEAL, THE DEPARTMENT ACTION SHALL BE FINAL AND UNAPPEALABLE.

ENFORCEMENT OFFICER: Sergeant Lambert (41) P1

Jim Fraser Habitat Biologist	360-902-2566		for Director WDFW

CC: